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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,212	09/24/2004	Robert K Rosen	31176280-054003	5115
51738	7590	07/02/2007		
BAKER & MCKENZIE LLP Pennzoil Place, South Tower 711 Louisiana, Suite 3400 HOUSTON, TX 77002-2716			EXAMINER CHOI, LING SIU	
			ART UNIT 1713	PAPER NUMBER
			MAIL DATE 07/02/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

*Supplemental*  
**Notice of Allowability**

Application No.

10/509,212

Examiner

Ling-Siu Choi

Applicant(s)

ROSEN ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Response filed 04/13/2007.
2. ☒ The allowed claim(s) is/are 1 and 3-15.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

**DETAILED ACTION**

1. This Office Action is in response to the Response filed April 13, 2007. Claims 1-15 are now pending.

***Allowable Subject Matter***

2. Claims 1 and 3-15 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The present claims are allowable over the closest references: Toyoda et al. (JP 2001-002731), Machida et al. (JP 2000-038418), and Machida et al. [US 6,169,154 B1 (or US 5,955,557)].

## Summary of Claim 1:

An article of manufacture, comprising
a <u>linear copolymer of ethylene and vinyl aromatic monomer</u> having a weight average molecular weight of less than 15,000
<b>wherein</b> the copolymer has a first and second terminal group: the first terminal end group being a <u>methyl group</u> and the second terminal end group being a <u>vinyl group</u> <b>wherein</b> <u>the terminal methyl group / the terminal vinyl group = 0.8:1 to 1:0.8</u>

Toyoda et al. disclose a wax comprising a polymer having a vinyl type or a vinylidene type unsaturated bond at one side terminal of the polymer chain, which comprise ethylene and  $C_{3-10}$   $\alpha$ -olefin and has the molar ratio of ethylene and  $\alpha$ -olefin is (81-100)/(0-19) (abstract; wax: [0010]). Toyoda et al. further disclose that the weight average molecular weights of the polymers are exemplified to be 1,700, 3,000, or 4,600 (Table 1). Toyoda et al. also disclose that a denaturation of an end unsaturated bond is carried out by the contact with maleic anhydride to provide a toner release agent or lubricant ([0163]; [0164]; [0173]). It is noted that Toyoda et al. is silent on another terminal group to be methyl group. Since the polymer is obtained via additional polymerization of ethylene and  $\alpha$ -olefin, the resulting polymer would contain a terminal methyl group. However, Toyoda et al. do not teach or fairly suggest a linear olefinic copolymer of ethylene and vinyl aromatic monomer and having the ratio of the terminal methyl group to the terminal vinyl group in the range of 0.8:1 to 1:0.8.

Machida et al.'418 disclose an olefinic macromonomer which satisfies the following requirements: (1) the weight-average molecular weight is 200-100,000; (2) the ratio of vinyl group in total unsaturated terminal is  $\geq 60\%$ ; and (3) the content of ethylene or propylene is greater than 50 mol.% (abstract). However, Machida et al.'418 do not teach or fairly suggest a linear olefinic macromonomer comprising ethylene and vinyl aromatic monomer and having the ratio of the terminal methyl group to the terminal vinyl group in the range of 0.8:1 to 1:0.8.

Machida et al.'154 disclose a branched ethylenic macromonomer which can function as a comonomer to provide a copolymer having excellent molding and working

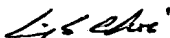
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properties, the branched ethylenic macromonomer has (a) a molar ratio of a terminal methyl group/a vinyl group in the range of 1 to 100; (b) a ratio of vinyl groups to the total unsaturated group in the macromonomer being 70 mol% or more; and (c) a weight-average molecular weight of the macromonomer is in the range of 100 to 20,000 (abstract; col. 6, lines 45-58). Machida et al. further disclose that the branched ethylenic macromonomer comprises ethylene and "at least one selected from the group consisting of  $\alpha$ -olefins having 3 to 20 carbon atoms, cyclic olefins and styrene" (col. 5, lines 61-65). However, Machida et al.'154 do not teach or fairly suggest a linear olefinic macromonomer comprising ethylene and vinyl aromatic monomer and having the ratio of the terminal methyl group to the terminal vinyl group in the range of 0.8:1 to 1:0.8.

### **Conclusion**

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.



LING-SUI CHOI  
PRIMARY EXAMINER

April 25, 2007